



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,721	04/27/2007	Kouji Tasaki	1204-46258X00	8570
20457 7590 10/05/2011 ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-3873				
EXAMINER SKYLES, TIFNEY L				
ART UNIT 2814		PAPER NUMBER		
MAIL DATE 10/05/2011		DELIVERY MODE PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/581,721

Applicant(s)

TASAKI ET AL.

Examiner

TIFNEY SKYLES

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1-22 is/are pending in the application.
- 5a) Of the above claim(s) 11 and 12 is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1-10 and 13-22 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 27 April 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CB/806)
Paper No(s)/Mail Date See Continuation Sheet
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :12/12/2007, 11/18/2008, 03/04/2009, 05/01/2009, 07/02/2009, 03/11/2011.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of the Group I invention in the reply filed on 07/08/2011 is acknowledged.

Drawings

2. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
6. The passage in Claim 1 stating, "when at least one of the plurality of IC chips that are arranged is positionally aligned corresponding to the determined position on an antenna circuit to be mounted, then the remaining IC chips can be disposed at once and together in the prescribed positions on the antenna circuit without the necessity of performing high precision positioning" is merely a description of a desired result. However, it is unclear what configuration should be provided to achieve said result.
7. The passage in Claim 5 stating, "performing thermal compression binding that joins the bridging plates on the IC chips and the antenna substrate via an anisotropic conductive adhesive layer", it is unclear how the "bridging plates", "IC chips", "antenna substrate", and "anisotropic conductive adhesive layer", are interrelated with each other.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-6, 9, 10, 14, 17-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Usami (US 2005/0134460).

Regarding Claim 1, Usami teaches a manufacturing method for an electronic device providing an IC chip **804** [Fig. 10B] having an external electrode formed respectively on each of the faces of an opposing pair of faces [Para. 0082], a transmission and reception antenna **910, 911** having a slit **802** formed therein and a bridging plate **903** that electrically connects the IC chip **804** and the antenna **910, 911**, wherein when at least one of the plurality of IC chips **804** that are arranged is positionally aligned corresponding to the determined position on an antenna circuit **910, 911** to be mounted, then the remaining IC chips **804** can be disposed at once and together in the prescribed positions on the antenna circuit **910, 911** without the necessity of performing high precision positioning.

Regarding Claim 2, Usami teaches a manufacturing method for an electronic device providing an IC chip **804** having an external electrode formed respectively on each of the faces of an opposing pair of faces [Para. 0082], a transmission and reception antenna **910, 911** having a slit **802** formed therein and a bridging plate **903** that electrically connects the IC chip **804** and the antenna **910, 911**, having at least the steps of: forming a plurality of antenna circuits using a first metallic film and forming an antenna substrate **910, 911** by disposing the antenna circuits on a base substrate **906**, or forming an antenna substrate by providing a plurality of antenna circuits from the first metallic film disposed on a base substrate; arranging in at least one of a longitudinal orientation or a

horizontal orientation, a plurality of the IC chips **804**, with the same intervals therebetween as are required when the plurality of the IC chips **804** are arranged in determined positions with respect to the corresponding circuits of the plurality of antenna circuits **910, 911** that the plurality of the IC chips **804** is mounted thereon; tentatively securing the plurality of IC chips **804** at once, to bridging plates **903** having a second metallic film formed thereon via a first anisotropic conductive adhesive layer **905** such that the plurality of the IC chips **804** thus arranged are electrically connected, and producing bridging plates **903** with the IC chips **804** attached; positionally aligning the bridging plates **903** with IC chips **804** attached in the determined position on the plurality of antenna circuits **910, 911** such that the plurality of the IC chips **804** are electrically connected; and performing thermal compression binding that joins the bridging plates **903** with IC chips **804** attached at once in the determined positions on the antenna substrate **910, 911** via a second anisotropic conductive adhesive layer **905** [see Para. 0087].

Regarding Claim 3, Usami teaches a manufacturing method for an electronic device providing an IC chip **804** having an external electrode formed respectively on each of the faces of an opposing pair of faces [Para. 0082], a transmission and reception antenna **910, 911** having a slit **802** formed therein and a bridging plate **903** that electrically connects the IC chip **804** and the antenna **910, 911**, having at least the steps of: forming a plurality of antenna circuits using a first

metallic film and forming an antenna substrate **910, 911** by disposing the antenna circuits on a base substrate **906**, or forming an antenna substrate by providing a plurality of antenna circuits from the first metallic film disposed on a base substrate; arranging in at least one of a longitudinal orientation or a horizontal orientation, a plurality of the IC chips **804**, with the same intervals therebetween as are required when the plurality of the IC chips **804** are arranged in determined positions with respect to the corresponding circuits of the plurality of antenna circuits **910, 911** that the plurality of the IC chips **804** is mounted thereon; tentatively securing the IC chips **804**, via a first anisotropic conductive adhesive layer **905**, after the plurality of the arranged IC chips **804** have been positionally aligned at once, such that the plurality of the IC chips is electrically connected in the determined positions with respect to the corresponding circuits of the plurality of antenna circuits **910, 911** that the plurality of the IC chips is mounted thereon; positionally aligning the tentatively secured plurality of IC chips with bridging plates **903** having a second metallic film so as to be electrically connected in the determined position on an antenna circuit **911**; and performing thermal compression binding that joins the bridging plates **903** at once on the plurality of the IC chips **804** and the antenna substrate **910, 911**, via a second anisotropic conductive adhesive layer **905** [see Para. 0087].

Regarding Claim 4, Usami teaches a manufacturing method for an electronic device providing an IC chip **804** having an external electrode formed respectively

on each of the faces of an opposing pair of faces [Para. 0082], a transmission and reception antenna **910, 911** having a slit **802** formed therein and a bridging plate **903** that electrically connects the IC chip **804** and the antenna **910, 911**, having at least the steps of: forming a plurality of antenna circuits using a first metallic film and forming an antenna substrate **910, 911** by disposing the antenna circuits on a base substrate **906**, or forming an antenna substrate by providing a plurality of antenna circuits from the first metallic film disposed on a base substrate; forming a first anisotropic conductive adhesive layer **905** in the determined position on the antenna circuit **910, 911**; arranging in at least one of a longitudinal orientation or a horizontal orientation, a plurality of the IC chips **804**, with the same intervals therebetween as are required when the plurality of the IC chips are arranged in determined positions with respect to the corresponding circuits of the plurality of antenna circuits **910, 911** the plurality of the IC chips is mounted thereon; tentatively securing the IC chips **804**, after the plurality of the IC chips arranged on the first anisotropic conductive adhesive layer **905** have been positionally aligned at once, such that the plurality of the IC chips **804** is electrically connected in the determined positions with respect to the corresponding circuits of the plurality of antenna circuits **910, 911** that the plurality of IC chips **804** is mounted thereon; forming a second anisotropic conductive adhesive layer **905** in the determined position on the plurality of IC chips **804** thus secured and the antenna circuits **910, 911** [see Para. 0087].

Regarding Claim 5, Usami teaches a manufacturing method for an electronic device providing an IC chip **804** having an external electrode formed respectively on each of the faces of an opposing pair of faces [Para. 0082], a transmission and reception antenna **910, 911** having a slit **802** formed therein and a bridging plate **903** that electrically connects the IC chip **804** and the antenna **910, 911**, having at least the steps of: dividing a bridging plate **903** such that one piece is equivalent to the number of the IC chips **804** in a line arranged in the widthwise direction of an antenna substrate **910, 911**, that can be subject to thermal compression binding at once, line by line; positionally aligning the bridging plates **903** with one row of antenna circuits **910, 911** arranged in the widthwise direction of an antenna substrate **910, 911**; and performing thermal compression binding that joins the bridging plates **903** on the IC chips **804** and the antenna substrate **910, 911** via an anisotropic conductive adhesive layer **905** [see Para. 0087; Fig. 11].

Regarding Claim 6, Usami teaches the manufacturing method for an electronic device according to claim 3, wherein at least one of the first metallic film **910, 911** and the second metallic film is aluminum [Para. 0051].

Regarding Claims 9, 17, and 18, Usami teaches the manufacturing method for an electronic device according to claims 2, 3, and 4, wherein gaps between the antenna substrate **910, 911** and bridging plate **903** are sealed by thermal

compression binding of the first and second anisotropic conductive adhesive layers **905** [Para. 0087].

Regarding Claim 10, Usami teaches the manufacturing method for an electronic device according to claim 3, wherein after the process in that the plurality of IC chips **804** are thermal compression bound at once with the antenna substrate **910, 911** and the bridging plates **903**, a process is performed in that a continuum of antenna circuits is cut into individual pieces [see Para. 0087; Fig. 11].

Regarding Claims 14, 21, and 22, Usami teaches the manufacturing method for an electronic device according to claims 2, 3, and 5, wherein thermal compression binding is performed that joins the bridging plates **903** and the IC chips **804** with the antenna substrate **910, 911** [Para. 0087].

Regarding Claims 19 and 20, Usami teaches the manufacturing method for an electronic device according to claims 2 and 5, wherein after the process in that the plurality of IC chips **804** are thermal compression bound at once with the antenna substrate **910, 911** and the bridging plates **903**, a process is performed in that a continuum of antenna circuits is cut into individual pieces [Para. 0087; Fig. 11].

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Usami in view of Usami (US 2004/0061613).

Regarding Claim 13, Usami ('460) teaches the manufacturing method for an electronic device according to claim 3, the step of arranging in at least one of a longitudinal orientation or a horizontal orientation, a plurality of the IC chips **804**, with the same intervals therebetween as are required when the plurality of the IC chips **804** are arranged in determined positions with respect to the corresponding circuits of the plurality of antenna circuits **910, 911** that the plurality of the IC

chips **804** is mounted thereon and arranging the plurality of IC chips at once, but fails to teach that it is a step that involves using a jig providing from a few to several thousands of concavities of the appropriate dimensions to accommodate an IC chip, then shaking the jig such that the IC chips on the jig are accommodated in each of the concavities. However, Usami ('613) teaches a step that involves using a jig **131** [Fig. 13] providing from a few to several thousands of concavities **132** of the appropriate dimensions to accommodate an IC chip, then shaking the jig **131** such that the IC chips on the jig are accommodated in each of the concavities **132** [see Para. 0051]. Therefore, it would have been obvious to a person having ordinary skill in the art to combine Usami ('613) with Usami ('460) because it can realize an assembly having an outstanding economy [Para. 0051].

13. Claims 7, 8, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Usami ('460) in view of Mosher Jr. et al (US 2003/0173408).

Regarding Claims 7 and 15, Usami ('460) teaches the manufacturing method for an electronic device according to claims 3 and 4 but fail to teach at least one of the first metallic film and the second metallic film is supported on a base substrate of an organic resin, this organic resin being selected from the group consisting of polyvinyl chloride (PVC), acrylonitrile butadiene styrene (ABS),

polyethylene terephthalate (PET), polyethylene terephthalate glycol derivative (PETG), polyethylene naphthalate (PEN), polycarbonate resin (PC), biaxial polyester (O-PET), and polyimide resin. However, Mosher Jr. et al teach at least one of the first metallic film and the second metallic film is supported on a base substrate **91** [Fig. 2] of an organic resin, this organic resin being selected from the group consisting of polyvinyl chloride (PVC), acrylonitrile butadiene styrene (ABS), polyethylene terephthalate (PET), polyethylene terephthalate glycol derivative (PETG), polyethylene naphthalate (PEN), polycarbonate resin (PC), biaxial polyester (O-PET), and polyimide resin [Para. 0052]. Therefore, it would have been obvious to a person having ordinary skill in the art to combine Mosher Jr. et al with Usami because it will provide a flexible base [Para. 0052].

Regarding Claims 8 and 16, Usami ('460) teaches the manufacturing method for an electronic device according to claim 3, but fail to teach at least one of the first metallic film and the second metallic film is supported on a base substrate comprised of paper. However, Mosher Jr. et al teach at least one of the first metallic film and the second metallic film is supported on a base substrate **91** comprised of paper. Therefore, it would have been obvious to a person having ordinary skill in the art to combine Mosher Jr. et al with Usami because it will provide a flexible base [Para. 0052].

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIFNEY SKYLES whose telephone number is (571)270-5019. The examiner can normally be reached on Mon-Fri 7:30AM - 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Howard Weiss/
Primary Examiner
Art Unit 2814

TLS